WHAT IS CLAIMED:

1. An improved ultrasonic imaging system constructed to facilitate imaging of at least a portion of a jaw, the system comprising:

(a) a probe, said probe comprising at least one array of ultrasonic transducers;

(b) a position locator module designed and constructed to be capable of defining a location of said probe in six degrees of freedom and transmitting said definition to a central processing unit; and

(c) said central processing unit capable of;

(i) receiving from said probe digital data from each of said ultrasonic transducers in said arrays;

(ii) further receiving from said position locator a location of said probe; and

(iii) transforming said digital data into an image of said at least a portion of a jaw.

2. The system of claim 1. wherein said image is a three dimensional image.

3. The system of claim 1, wherein said probe is a mandibular probe designed and constructed to facilitate imaging of at least a portion of a lower jaw and includes:

(i) a first array of ultrasonic transducers mounted upon a first wand, said first array of ultrasonic transducers positionable distal to the lower jaw and outside of a mouth;

(ii) a second array of ultrasonic transducers, said second array of transducers mounted upon a second wand, said second array of ultrasonic transducers positionable proximal to the lower jaw and inside of said mouth; and

(iii) at least one connective member, said connective member designed and constructed to connect said first and second wands one to another and to allow relative positioning thereof;

wherein said connective member includes an assembly designed and constructed to attach said first and second wands and facilitate translational motion of said wands with respect to one another.

4. The system of claim 1, wherein said probe is designed and constructed to facilitate imaging of at least a portion of an upper jaw and includes a single curved array of ultrasonic transducers mounted upon a wand, said wand designed and constructed to be insertable into a mouth of a patient.

5. The system of claim 1 wherein said position locator module includes at least one first position sensor located on said probe and at least one second position sensor located on a head of a subject.

6. The system of claim 1 wherein said position locator module includes a first mechanical positioning mechanism designed and constructed to position said probe and a retention means designed and constructed to engage and retain a head (of a subject in a known position.

7. The system of claim 1, further including an ultrasonic coupling cushion, said cushion comprising an elastic container capable of retaining a coupling medium wherein said elastic container is designed and constructed to be insertable in a mouth of a subject

8. A method of producing an ultrasonic image of at least a portion of a jaw, the method comprising:

(a) providing a probe, said probe comprising at least one array of ultrasonic transducers

(b) defining a location of said probe in six degrees of freedom by means of a position locator;

(c) communicating said location to a central processing unit;

(d) transmitting an ultrasonic signal from at least one of said transducers and receiving at least a portion of said ultrasonic signal at least one of said transducers; and

(e) employing a central processing unit to;

(i) receive a set of digital data pertaining to said transmitting and receiving performed by said transducers in said arrays of said probe;

(ii) further receive from said position locator a location of said probe; and

(iii) transform said digital data into an image of said at least a portion of the jaw.

9. The method of claim 8, wherein said image is a three dimensional image.

10. The method of claim 8, wherein providing a probe includes providing a mandibular probe designed and constructed to facilitate imaging of at least a portion of a lower jaw and includes:

(i) providing a first array of ultrasonic transducers mounted upon a first wand, said first array of ultrasonic transducers positionable distal to the lower jaw and outside of a mouth;

(ii) providing a second array of ultrasonic transducers, said second array of transducers mounted upon a second wand, said second array of ultrasonic transducers positionable proximal to the lower jaw and inside of said mouth;

(iii) providing at least one connective member, said connective member designed and constructed to connect said first and second arrays one to another and to allow relative positioning thereof;

and wherein said connective member includes an assembly designed and constructed to attach said first and second wands and facilitate translational motion of said wands with respect to one another.

11. The method of claim 8, wherein providing a probe includes providing a maxillary probe designed and constructed to facilitate imaging of at least a portion of an upper jaw and includes a single curved array of ultrasonic transducers mounted upon a wand, said wand designed and constructed to be insertable into a mouth of a patient.

12. An ultrasonic coupling cushion, the cushion comprising an elastic container capable of retaining a coupling medium wherein said elastic container is designed and constructed to be insertable in a mouth of a subject.

13. The coupling cushion of claim 12, further comprising said coupling medium.

14. The coupling cushion of claim 13, wherein said coupling medium is selected from the group consisting of water, an aqueous solution, a gel and a polymer solution.

15. The coupling cushion of claim 12, wherein said elastic container further includes attachment device designed and constructed to engage and retain at least a portion of an ultrasonic probe.